

# A PARTLY UNDERGROUND BOLETUS OF EXTRAORDINARY SIZE

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The following notes describe a very large *Boletus* which was found at Merredin by Mrs. M. B. Mills. The fungus is remarkable for its size and its growing habit, and possibly for its shape as well. Mrs. Mills first noticed this species about fifteen years ago, when it was growing at the butt of a small eucalypt, near some rocks, on ground which had never been cleared for agriculture or for any other purpose. The fungus appeared for two consecutive years. Mrs. Mills then left the locality, and did not return there to look for the *Boletus* until June, 1948.

After patient observation, on July 27 a large specimen, possibly still immature, was seen growing and collected. Figures F and G, from sketches by Mrs. Mills, and with the main measurements in centimetres, give an idea of the general appearance of the specimen; the weight was estimated at about 6 to 7 lbs. On August 22, Mrs. Mills found another *Boletus* very close to the spot where the first specimen was growing, and obviously from the same mycelium. At that stage the stem was cream coloured and the cap almost black. On August 27, the specimen had only partly emerged from the ground, and had reached the size of a small plate. The stem had a soft greyish-green colour, merging into a deep grass-green towards the top. The veil covering the pores was velvet-like, coloured green with the same greyish tone as the lower part of the stem. The cap was still very dark.

By September 2 the stem had all turned deep green and had lost its velvet-like texture. The veil while still preserving some greenish tinge was already turning brown. The cap was lighter in colour than in the younger stages. By September 3 the specimen seemed to have reached maturity and was collected; it is illustrated in figures A to D.

The distinguishing features of this species as they appeared in the specimens observed by Mrs. Mills, and clearly confirmed by the specimen illustrated here, are the enormous size and the atrophy of part of the cap. In addition, the fungus apparently never emerges entirely from the ground, the stem and part of the cap always remaining buried. The part of the cap which remains underground is atrophied, and would normally amount to at least half of the whole cap. It often takes the shape of a large flap of dark brown tissue, which could be likened to an elephant's ear, and which remains closely adherent to the stem. In the illustrations given with these notes, the edge of this part of the cap is shown distinctly against the white background, but in reality it is very hard to single it out against the dark brown stem.

The fully developed part of the cap takes a polyporoid appearance, and were it not for the distinctly long tubes and thick soft

flesh, it might be questioned whether this species should be retained within the genus *Boletus* or whether a new genus should be instituted. Figure D gives a cross-section of the fully developed part of the cap, from the dark skin above through the flesh to the long oblique tubes below.

After the flesh of the fungus has rotted away the dried and blackened skin persists on the ground for a long time.

Below is given a full description of the species, which it is suggested could be named

*Boletus polyporoides*, sp. nov.

**Cap** irregularly sub-elliptical, 17-25 × 27-30 cm., irregularly lobed or dented, sometimes with the edge folded under, distinctly asymmetrical, a sector of approximately one-half of the cap being atrophied and at times reduced to a thick flap of skin pressed against the stem; the normally developed part of the cap protrudes from the ground, usually slightly obliquely upwards, and is covered by a thick, easily separated elastic pellicle, slightly sticky when wet, coloured very dark at first, then warming to dark chestnut and slowly turning to a paler van Dyke brown especially towards the centre, shading into arcolate warm chestnut brown, the arcolae being very irregular in shape and size, usually 1-4 mm. across, the spaces between the arcolae being vein-like, bright red-orange to yellow-orange in colour.

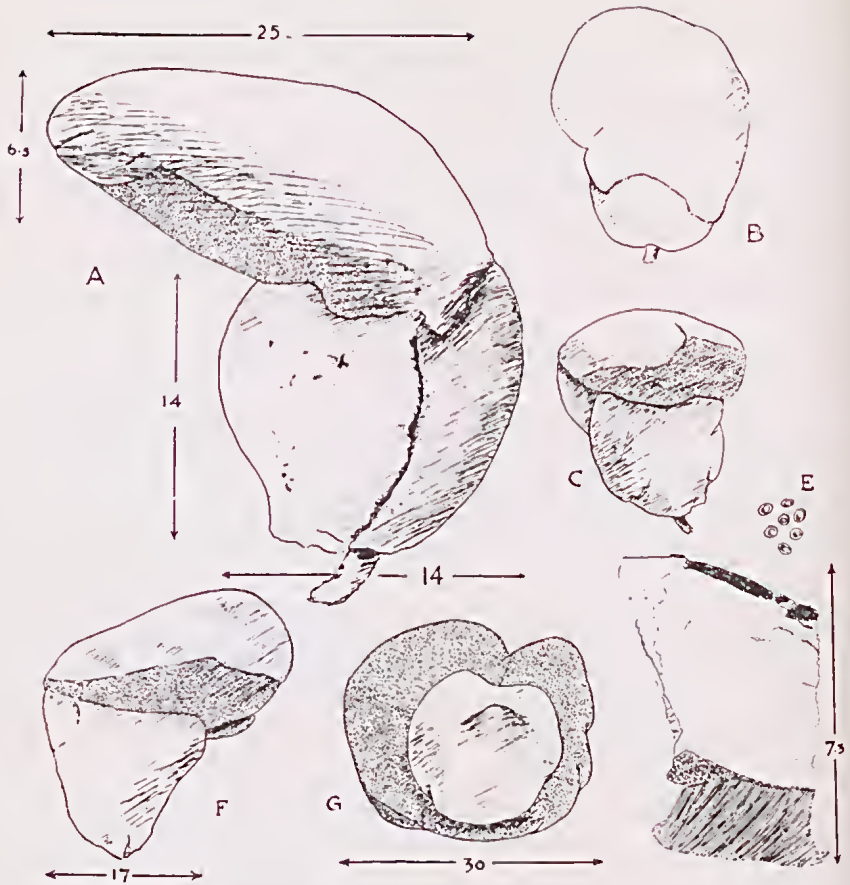
**Flesh** soft, evenly textured, 4-6.5 cm. thick near the disk, pale ochre yellow towards the under surface, waxy yellow with a rosy tinge near the upper surface, tinged van Dyke brown under the pellicle.

**Tubes** 2-3.5 cm. long, olivaceous to yellowish-green, turning dark brown with age, easily separated from the pileus and from each other. **Pores** minute, 2.5 to 3 in 1 mm., at first covered by a pale velvety green veil with a greyish tinge, then turning olivaceous brownish, finally dark brown at maturity.

**Stem** 14-25 cm. long, 13-18 cm. in diameter, rapidly attenuated downwards, at times attenuated upwards as well (ventricose), very stout, entirely underground, pale cream colour at first, then pale green with a greyish tinge, grass-green near the upper end, deep green later, finally blackish brown at maturity. **Flesh** rich yellow-brown, darkening to pale ochraceous tan later, dark brown near the pellicle.

**Spores** hyaline with old gold to pale van Dyke brown tinge singly, brown in mass, broadly elliptical to ovate or sub-spherical, 6-9 × 5-7 microns, with a large oily drop.

**Smell** strong, like that of fresh coffee.



*Boletus polyporoides*, sp. nov.

A—side view of the specimen from which most of the description was written; notice the asymmetry of the cap, the deep fold in the side of the stem, and the peculiar thick root-like structure formed by mycelial threads. B—back view; notice the enormous flap formed by the atrophied part of the cap, especially on the right-hand side. C—front view; part of the flap is visible on the left side. D—section of the cap where fully developed; notice the dark skin above, the evenness in the structure of the flesh, the pattern left on the lower face of the flesh where the tubes have been detached, and the long oblique tubes. E—the spores; notice the large size of the internal drop. F—side view, and G—ventral view of the larger specimen, from sketches by Mrs. M. B. Mills. All sizes given in cm.